

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

POWER INTEGRATIONS, INC.,)	
)	REDACTED
Plaintiff,)	PUBLIC VERSION
)	
v.)	C.A. No. 04-1371-JJF
)	
FAIRCHILD SEMICONDUCTOR)	
INTERNATIONAL, INC., and FAIRCHILD)	
SEMICONDUCTOR CORPORATION,)	
)	
Defendants.)	

**DEFENDANTS FAIRCHILD SEMICONDUCTOR INTERNATIONAL, INC. AND
FAIRCHILD SEMICONDUCTOR CORPORATION'S OPENING POST-TRIAL
BRIEF IN SUPPORT OF THEIR ASSERTION THAT THE PATENTS-IN-SUIT
ARE UNENFORCEABLE DUE TO INEQUITABLE CONDUCT**

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I. **INTRODUCTION.**

Power Integrations, Inc. (“Power Integrations”) and its inventors deliberately withheld invalidating prior art from the Patent Office so that the patents-in-suit would issue. Indeed, Power Integrations went so far as to make affirmative misstatements about the prior art to convince the Examiner to allow claims that had been rejected. This constitutes inequitable conduct, rendering the patents-in-suit unenforceable in their entirety.

Power Integrations cannot seriously dispute the materiality of the withheld prior art. Indeed, in the past year, the Patent Office determined that the withheld prior art raises a “substantial new question” as to the patentability of Power Integrations’ circuit patents and granted requests to reexamine each of those patents. In doing so, the Patent Office determined that the withheld prior art was not cumulative of any of the art previously before the Examiner. In other words, Power Integrations withheld from the Patent Office more pertinent prior art while providing only less relevant prior art.

Unable to dispute the materiality of the withheld prior art, Power Integrations will, no doubt, argue that it did not intend to deceive the Patent Office. Materiality and intent are assessed on a “sliding scale.” Where, as in the instant case, the showing of materiality is high, Fairchild is afforded a lower threshold for establishing intent. Given the volume of prior art withheld and Power Integrations’ pattern of repeatedly withholding the most material references, any excuses put forth by Power Integrations must fail. For instance, Dr. Eklund – the inventor of ‘075 Patent – searched and located at least twelve key prior art references prior to filing his patent application. Yet, none of this art was provided to the Patent Office. Dr. Eklund failed to provide even one prior art reference – not a patent, article or product – during the entire prosecution of the ‘075 Patent. Just as egregious, the inventors of the circuit patents withheld their own prior inventions and prior art Power Integrations products, so that they could draft claims covering what had been dedicated to the public, essentially taking back those inventions.

Moreover, “lack of intent” cannot be an excuse where Power Integrations affirmatively misled the Patent Examiner. During the prosecution of the ‘851 Patent, in order to overcome a

rejection, Power Integrations stated that the prior art “does not disclose, teach, or suggest” an oscillator that generates a maximum duty cycle signal. The applicants now admit that their own prior art PWM power supply prior art devices included an oscillator that met this limitation. They knew, or should have known, of the falsity and materiality of this misstatement.

In sum, the evidence supports but one conclusion. Power Integrations committed fraud on the Patent Office by engaging in a pattern of withholding material prior art and making deliberate misrepresentations in order to get their patents allowed. Consequently, each of the patents-in-suit should be held unenforceable.

II. LEGAL STANDARDS.

A finding of inequitable conduct renders a patent unenforceable. *J.P. Stevens & Co., Inc. v. Lex Tex Ltd.*, Inc., 747 F.2d 1553, 1560 (Fed. Cir. 1984). Inequitable conduct related to a particular claim in a patent renders the entire patent unenforceable. *Kingsdown Medical Consultant, Ltd. v. Hollister, Inc.*, 863 F.2d 867, 874 (Fed. Cir. 1988) (en banc) (reaffirming the rule announced in *J.P. Stevens*). “Inequitable conduct occurs when a patentee breaches his or her duty to the PTO of ‘candor, good faith, and honesty.’” *Warner-Lambert Co. v. Teva Pharms. USA, Inc.*, 418 F.3d 1326, 1342 (Fed. Cir. 2005). A patent is unenforceable for inequitable conduct if it is shown, by clear and convincing evidence, that an applicant submitted materially false information or failed to disclose material information to the PTO during prosecution, with an intent to deceive. *Molins PLC v. Textron, Inc.*, 48 F.3d 1172, 1178 (Fed. Cir. 1995).

A. The Court Must Balance the Materiality of the Misconduct with the Showing of Intent.

To determine whether a patentee committed inequitable conduct, a court balances the levels of materiality and intent to see whether equity warrants a conclusion of inequitable conduct, “with a greater showing of one factor allowing a lesser showing of the other.” *Digital Control Inc. v. Charles Machine Works*, 437 F.3d 1309, 1313 (Fed. Cir. 2006); *Molins PLC*, 48 F.3d at 1178. With high materiality, “the showing of intent can be proportionally less.” *Novo Nordisk Pharm., Inc. v. Bio-Technology Gen. Corp.*, 424 F.3d 1347, 1359 (Fed. Cir. 2005).

1. **Affirmative misstatements are presumed to be highly material.**

The Federal Circuit has held that “affirmative misrepresentations by the patentee, in contrast to misleading omissions, are more likely to be regarded as material.” *Hoffman-La-Roche v. Promega Corp.*, 323 F.3d 1354, 1367 (Fed. Cir. 2003); *Rohm & Haas Co. v. Crystal Chem. Co.*, 722 F.2d 1556, 1571 (Fed. Cir. 1983); *Gardiner v. Gendel*, 727 F. Supp. 799, 804 (E.D.N.Y. 1989) (“plaintiffs … engaged in inequitable conduct … by having misrepresented the state of the prior art by failing to disclose the most relevant known prior art while disclosing clearly less relevant prior art.”)

2. **Prior art that could invalidate a claim is highly material.**

“While inequitable conduct includes affirmative misrepresentations of material facts, it also arises when the patentee fails to disclose material information to the PTO.” *Ferring B.V. v. Barr Laboratories, Inc.*, 437 F.3d 1181, 1186 (Fed. Cir. 2006). An omitted reference is not immaterial simply because the patent would have issued over it. *Bristol-Myers Squibb Co. v. Rhone-Poulenc Rorer, Inc.*, 326 F.3d 1226, 1238 (Fed. Cir. 2003) (affirming a finding of inequitable conduct, notwithstanding that the withheld reference was cited in reexamination and “eventually deemed by an examiner to be patentable thereover”); *PerSeptive Biosystems, Inc. v. Pharmacia Biotech, Inc.*, 225 F.3d 1315, 1322 (Fed. Cir. 2000) (stating that a patent may be valid over the withheld reference and yet be rendered unenforceable due to inequitable conduct). When materiality of information is a close-call, the Federal Circuit has held that “a patent applicant should err on the side of disclosure.” *Flex-Rest, LLC v. Steelcase, Inc.*, 455 F.3d 1351 (Fed. Cir. 2006); see also *Critikon, Inc. v. Becton Dickinson Vascular Access, Inc.*, 120 F.3d 1253, 1257 (Fed. Cir. 1997) (“It is axiomatic that ‘[c]lose cases should be resolved by disclosure, not unilaterally by the applicant.’”) (internal citation omitted).

3. **Intent can be presumed from circumstantial evidence.**

There is “no requirement that intent to deceive be proven by direct evidence; in fact, it is rarely proven by such evidence.” *Impax Labs. v. Aventis Pharms.*, 468 F.3d 1366, 1375 (Fed. Cir. 2006) (citing *Merck & Co. v. Danbury Pharm., Inc.*, 873 F.2d 1418, 1422 (Fed. Cir. 1989)).

Consequently, intent to deceive the Patent Office is most commonly “inferred from the facts and circumstances surrounding the applicant’s overall conduct.” *Impax Labs.*, 468 F.3d at 1375.

Regarding the withholding of material prior art, the intent threshold is met if it is established that “(1) the applicant knew of the information; (2) the applicant knew or should have known of the materiality of the information; and (3) the applicant has not provided a credible explanation for the withholding.” *Ferring*, 437 F.3d at 1191. Affirmative misstatements, on the other hand, may by themselves support an inference of intent to deceive because typically it cannot be argued that such misrepresentations are “the result of an honest mistake.” *Rohm & Haas Co. v. Crystal Chemical Co.*, 722 F.2d 1556, 1571 (Fed. Cir. 1983) (“While direct proof of intent to mislead is normally absent, such submissions [false statements] usually will support the conclusion that the affidavit in which they were contained was the chosen instrument of an intentional scheme to deceive the PTO.”)

III. INTEGRATIONS’ ‘075 PATENT IS UNENFORCEABLE.

During the prosecution of the ‘075 Patent, neither the inventor Klas Eklund (“Dr. Eklund”) nor his attorney cited any prior art to the Patent Office. However, the undisputed evidence shows that

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uncovered a large number of highly material prior art references. The materiality of that prior art cannot be disputed as it disclosed the claimed “P-TOP” and “extended drain” features that Dr. Eklund claimed in the ‘075 Patent. Dr. Eklund emphasized these same features during prosecution to overcome the Examiner’s rejections.

Dr. Eklund was a seasoned engineer and obviously recognized the relevance of the prior art he found, as demonstrated in both his analysis of that prior art and his invention notes. Yet, Dr. Eklund cannot identify any specific reference provided to his attorney or the Patent Office, and his explanation for this failure lacks credibility. The evidence demonstrates that Dr. Eklund was motivated to conceal the prior art to obtain money from investors based on the likely issuance of the patent and ultimate transfer of the application to Power Integrations for \$5 million in stock. The totality of this evidence supports but one conclusion: Dr. Eklund withheld

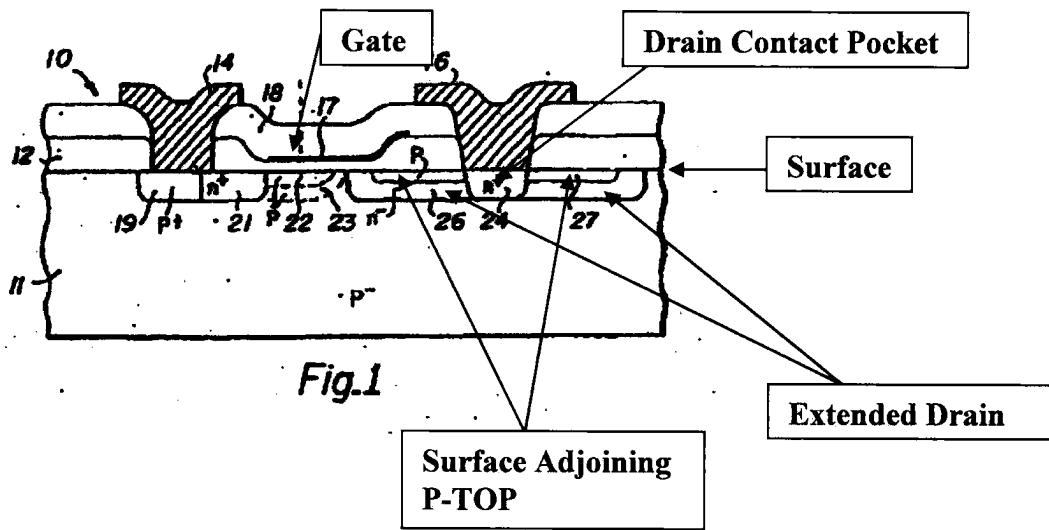
the prior art he discovered with an intent to deceive the Patent Office and thus committed inequitable conduct. Accordingly, the '075 Patent should be held unenforceable.

A. The Alleged Inventive Features of the '075 Patent.

Dr. Eklund and Power Integrations have emphasized two elements of claim 1 of the '075 Patent as being the alleged key inventive features: (1) the "P-TOP", and (2) the "extended drain." Prior art disclosing these features thus is highly material.

1. The "P-TOP"

Claim 1 of the '075 Patent expressly requires: "a surface adjoining layer of material of the first conductivity type on top of an intermediate portion of the extended drain region between the drain contact pocket and the surface-adjoining positions." [PX4 at 5:65-68; FF1-11] Dr. Eklund called this "surface adjoining layer" the "P-TOP" and has testified that he considered it to be an inventive element. [FF3, 4, 8] Power Integrations repeatedly referred to the '075 Patent as the "P-TOP patent." [FF5] In Figure 1 of the '075 Patent below, the surface adjoining layer element is labeled "27":



[FF1-11; PX4 at Fig. 1]

2. The "Extended Drain".

Claim 1 of the '075 Patent also requires: "an extended drain region of the second conductivity type extending laterally each way from the drain contact pocket to surface-adjoining positions." [PX4 at 5:62-64; FF12-17] In Figure 1 (above) the "extended drain" is labeled "26."

[FF13] Dr. Eklund has testified that an inventive aspect of the ‘075 invention is having an n-well (i.e. the extended drain) extending both to the right and left from the drain contact pocket.

[FF12] The extended drain region of the ‘075 Patent extends to “surface-adjoining positions,” but according to Dr. Eklund need not actually contact the surface. [PX4 at 5:62-64; FF16]

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[FF46, 308-315] While Dr. Eklund maintained this collection of prior art through the prosecution of the ‘075 Patent [FF312], he never provided a single reference to the Patent Office. [PX4 at p. 1; FF340]

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[FF47-50, 53-77, 82-84, 105-133, 213-287; DX627] Dr. Eklund testified that this document is a prior art search for the ‘075 Patent. [FF48] The 12 exhibits included scholarly articles in Dr. Eklund’s possession as well as papers by competitors regarding the state of the art devices. [DX627] Dr. Eklund admits that all of the devices and articles considered in that memo were prior art to his ‘075 invention. [FF52, 78-79]

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[FF80-81; DX627; *see also* FF316-334] The timing of the 1984 prior art study represents more than mere possession of twelve highly relevant references but establishes that Dr. Eklund fully understood them and their relevance to his own invention, which he allegedly first began to conceptualize less than a month earlier. [PX29] If Dr. Eklund’s invention story is believed, essentially his prior art search and invention research occurred simultaneously, with the prior art guiding his research. [PX29,

PX30, DX627] Despite the fact that he studied the art to determine the most relevant articles,

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, he

never disclosed his memo or a single piece of prior art to the Patent Office. [FF93-101]

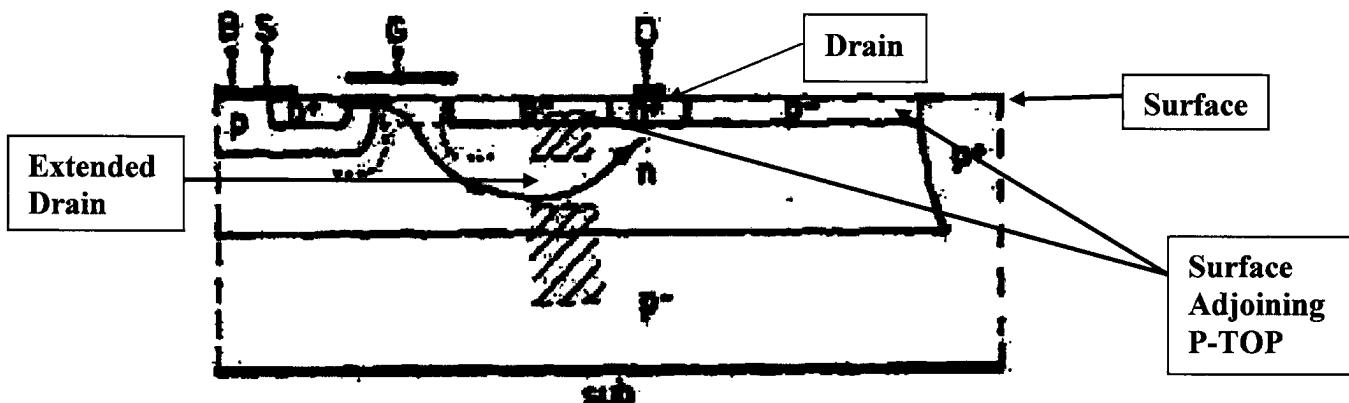
C. Dr. Eklund Withheld the Material Ludikhuize Article, Which Contained All Alleged Novel Elements of Claim 1 – Including the P-TOP and Extended Drain.

One article included in Eklund's 1984 prior art survey and binder of "key articles" merits particular attention: Ludikhuize, *High Voltage DMOS and PMOS in Analog IC's*, IEEE (1982) [FF105-111; DX627 at KE001463; DX56 at FCS1692679] The article disclosed the P-TOP – the primary inventive feature of Claim 1 – more than two years before Dr. Eklund's first work, but was withheld by Dr. Eklund. [FF112-121]

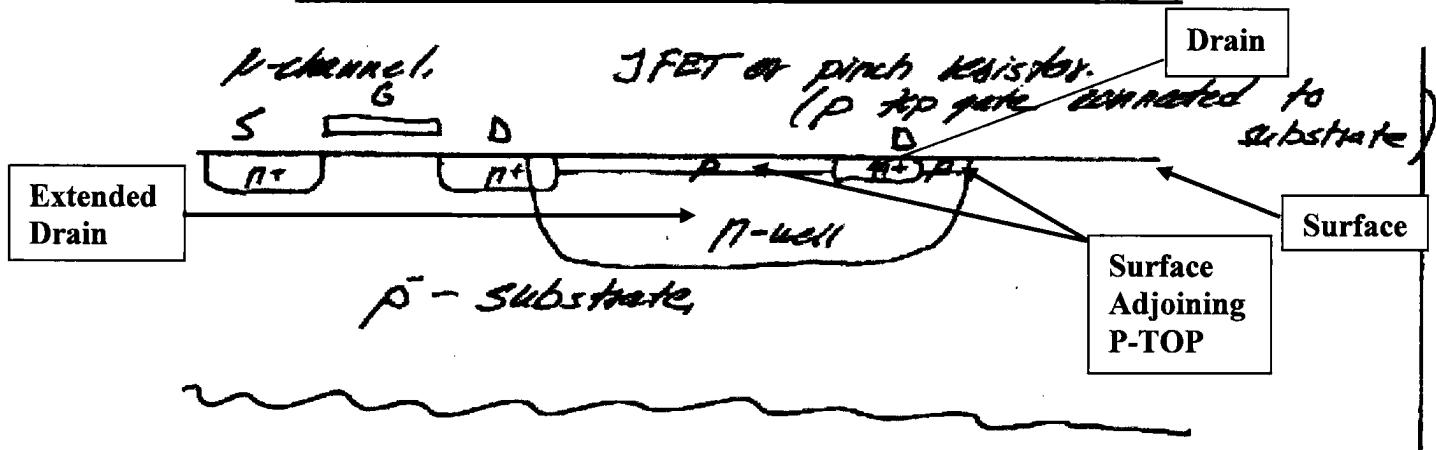
1. The Ludikhuize Article included the "P-TOP" and "Extended Drain" structures, which were copied by Dr. Eklund.

Dr. Eklund admits that the 1982 Ludikhuize article discloses a P-TOP on top of the extended drain region that extends laterally each way from the drain contact pocket. [FF112-113, 121; DX56 at Fig. 2] Dr. Eklund admits that the P-TOP in Ludikhuize is "very similar" to the P-TOP of the '075 Patent and that Ludikhuize actually used the term "P-TOP" before he did. [FF112-132] He admits that both are "P-type," both are on top of an extended drain region, both extend laterally each way on opposite sides of the drain contact pocket and both extend from the drain contact to the edge of the gate. [FF120-121] The P-TOP is "surface adjoining" in both. [FF114-117] The similarities between the 1982 Ludikhuize article and Dr. Eklund's initial 1984 drawings and patent figures are striking (see below and *supra* '075 Patent Fig. 1):

The Undisclosed Ludikhuize Article (DX56 at Fig. 2)



OHS West:2603 Fig. 2. LDMDST with interrupted p-layer.

Dr. Eklund's Alleged Initial '075 Conception Notes (PX29 at p. 1)

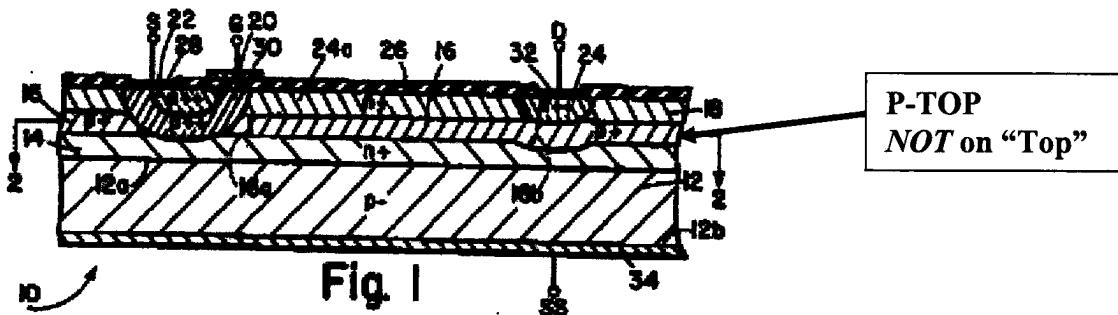
Notably both Dr. Eklund's initial September 26, 1984 conception notes and the 1982 Ludikhuize article used the term "p top." [PX29 at pp. 1, 2; DX627 at KE001463; DX56; FF118-119] Ludikhuize was clearly the first to use it and this is where Dr. Eklund got the idea. Dr. Eklund admits that in the 1984-1985 timeframe he knew the Ludikhuize article disclosed a P-TOP layer. [FF133-134] Dr. Eklund clearly knew of the 1982 article when he "conceived" the alleged P-TOP invention and not only copied the Ludikhuize P-TOP feature but used the same term to describe it.

The 1982 Ludikhuize article also expressly used the term "extended drain" for the region directly beneath the P-TOP, as did Dr. Eklund in his '075 Patent. [DX627 at KE001463; DX56; FF126; PX4 at 5:62-64] Dr. Eklund admits that the Ludikhuize article shows "an extended drain region – labeled "n" – which extends laterally each way from the drain contact pocket underneath the P-TOP layer and which comes to the surface. [FF112, 122-131; *see also* FF114] It is again evident that Dr. Eklund not only copied the Ludikhuize invention, but the terminology as well.

2. During prosecution of the '075 Patent Dr. Eklund overcame the Examiner's rejections by emphasizing that his "P-TOP" layer was "Surface Adjoining" and emphasizing the "Extended Drain".

During prosecution, the Patent Office found only three prior art references. The Patent Office rejected the claims based on one such reference – the Colak patent. [See PX8 at PIF00035; FF138-145] The Colak structure was as follows:

**Colak Patent Figure 1 With Corresponding P-TOP Structure Highlighted
Colak Did Not Show A P-TOP On “Top”**



[DX89 at Fig. 1] Dr. Eklund, the prosecuting attorney Mr. Schatzel, and the Examiner held a telephone interview to discuss Colak, during which it was agreed that “[n]ew amendments to the claims to be submitted distinguishing applicant’s channel structure and surface adjoining layer 27 over Colak.” [PX8 at PIF00054] Dr. Eklund later amended his claims, adding for the first time a requirement that the P-TOP layer be on “top” or “surface adjoining.” [PX8 at PIF00055] Dr. Eklund distinguished over Colak by pointing out that in the ‘075 invention the P-TOP layer was on top or “surface adjoining” but that in Colak the P+ layer labeled “16” (which corresponds to the P-TOP layer of the patent) “is not surface-adjoining but is buried under layer 18.” [PX8 at PIF00056] In response, the Examiner allowed the claims of the ‘075 Patent. [PX8 at PIF00061] Basically, Dr. Eklund obtained Claim 1 in part by arguing the P-TOP had to be on top.

3. While making these arguments to the Examiner, Dr. Eklund withheld the Ludikhuize article showing the “Surface Adjoining” P-TOP structure and the “Extended Drain” structure beneath.

At no point during these exchanges with the Examiner distinguishing the ‘075 claims over Colak did Dr. Eklund disclose the 1982 Ludikhuize reference, which clearly had a “surface adjoining” P-TOP layer, on top. [PX8; FF146, 135-137] :

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[FF106-108, 133-134]

Clearly, this Ludikhuize reference with its “surface adjoining” P-TOP layer would have been highly pertinent to a reasonable Examiner. Dr. Eklund’s failure to disclose it, his knowledge of its materiality and his failure to provide any credible explanation for withholding it

demonstrate his intent to deceive. *See Brasseler*, 267 F.3d at 1384 (where applicant “has notice that information exists that appears material and questionable, that person cannot ignore that notice in an effort to avoid his or her duty to disclose”); *Ferring B.V. v. Barr Laboratories, Inc.*, 437 F.3d 1181, 1191 (Fed. Cir. 2006) (intent inferred where knowledge of materiality and failure to provide credible explanation for withholding).

Dr. Eklund’s intent to deceive is also evident from the fact that in a later application for his U.S. Patent 5,146,298, which was directed at a *buried* P-TOP layer, he *did* disclose the Ludikhuize reference. [DX192; DX472; FF147-150] In other words, where the patent application was directed at an invention more remote from Ludikhuize (i.e. in the ‘298 patent the p-layer was not surface-adjoining like Ludikhuize) he disclosed Ludikhuize. In contrast, Dr. Eklund *failed* to disclose Ludikhuize where the patent was directed at the *same* invention (i.e. in the ‘075 Patent the P-TOP was on top or “surface-adjoining” like Ludikhuize).¹ This pattern of conduct clearly establishes the requisite intent to deceive the Patent Office.

D. Dr. Eklund Withheld Material Prior Art Showing an “Extended Drain”.

1. Dr. Eklund withheld the material Wakaumi article, which showed an “Extended Drain” and which he relied upon in his inventor notes.

In Dr. Eklund’s initial September 26, 1984 notes, he compared his proposed concept to a device in the following prior art article: Wakaumi, *A Highly Reliable 16 Output High Voltage NMOS/CMOS Logic*, IEDM (1983). [PX29 at p. 3; DX55; FF19-27]

REDACTED

[FF31-35] Integration of high and low voltage devices was the primary goal of Dr. Eklund’s work. [FF25] Simply put, the Wakaumi reference included most of the features of the claimed ‘075 invention, was directly relevant to Dr. Eklund’s work and was

¹ In the ‘298 patent, Dr. Eklund described the Ludikhuize article as adding “a surface layer of p-type doping” in order to “improve thin layer lateral D-MOS transistors as a source follower and further reduce resistance when the device is ‘on.’” [DX472 at FCS1685959-FCS1685960] During the earlier prosecution of the ‘075 Patent, Dr. Eklund described the Colak patent as “a DMOS transistor suitable for source follower applications.” [PX8 at PIF00044] Clearly, Dr. Eklund thought that the P-TOP in Ludikhuize improved upon the Colak-type prior art. Yet, when the Examiner cited Colak, and Dr. Eklund was claiming the P-TOP as his own invention, he withheld the Ludikhuize art.

material enough for him to reference in his invention notes. [FF35] The only thing lacking was the “P-TOP” and extension of the drain “each way” (as opposed to one way) from the drain contact pocket. [DX55; FF31-34] Yet Dr. Eklund did not provide Wakaumi to the Patent Office. [PX4 at p. 1] Dr. Eklund had the Wakaumi article in his possession from 1984 through the prosecution of the ‘075 Patent, but intentionally withheld it from the Patent Office. [FF28-30, 36-37, 222-226, 380]²

2. The 1984 prior art study showed that an “Extended Drain Region Extending Laterally Each Way” was well-known.

Dr. Eklund knew during prosecution of the ‘075 Patent that

REDACTED

[FF85-89]

Dr. Eklund admits that the following articles **REDACTED** showed this same element: (1) Plummer (Integrated Circuits Lab at Stanford), *Monolithic MOS High Voltage Integrated Circuits*, IEDM 1980 (1980);³ (2) Fujii et al (Sharp Corp.), *400 Volt MOS IC for EL Display*, ISSCC 1981 (1981);⁴ (3) Yamaguchi et al (Tektronix, Inc.), *Process and Device Design of a 1,000 Volt MOS IC*, IEEE (1981);⁵ and (4) Rumennik et al (Xerox), *Integrated High and Low Voltage CMOS Technology*, IEEE (1982).⁶ He also admits that the following articles **REDACTED** showed an “extended drain region of the second conductivity type extending laterally *each way* from the drain contact pocket”: (1) Tihanyi (Siemens), *Integrated Power Devices* IEEE (1982);⁷ (2) Wrathall et al (Motorola), *Integrated Circuits for Control of High Power*, IEEE (1983);⁸ and (3) Pomper et al, *High Voltage DMOS Driver Circuit*, IEEE (1980).⁹ Yet he disclosed none of this art, **REDACTED**, to the Patent

² Dr. Eklund also considered a second article, by Hower, in his September 1984 notes, but did not disclose it to the Patent Office. [FF 38-44]

³ DX627 at KE001454; DX616; FF 213-221.

⁴ DX627 at KE001456; DX617; FF 227-233.

⁵ DX627 at KE001457; DX618; FF 234-241.

⁶ DX627 at KE001461; DX622; FF 263-271.

⁷ DX627 at KE001458; DX620; FF 242-248.

⁸ DX627 at KE001459; DX619; FF 249-255.

⁹ DX627 at KE001460; DX621; FF 256-262.

Office. [PX4 at p. 1]¹⁰ A reasonable examiner would have found this prior art, all of which disclosed a similar “extended drain” element as the ‘075 Patent, important to his or her examination of the ‘075 application.

3. During prosecution Dr. Eklund argued that his “Extended Drain” was novel – while withholding prior art that established it was not.

During prosecution of the ‘075 Patent, Dr. Eklund responded to the Examiner’s rejections by emphasizing that his claims contained a drain region “extending laterally each way from the drain contact pocket to surface adjoining positions” and that this extended drain, in part, enabled the combination of high voltage and low voltage transistors on the same chip. [See PX8 at PIF00035, PIF00045, PIF00050, PIF00056]¹¹ At the same time, he was aware that he was not the inventor of these structures and he withheld all of the prior art in his possession showing these structures. [FF85-89, 95-97; PX4 at p. 1]

REDACTED

[FF95-101; PX4 at p. 1]¹² Dr. Eklund

must have known that the withheld prior art was highly material, given its direct relevance to his arguments overcoming the Examiner’s rejections. *See Cargill, Inc. v. Canbra Foods, Ltd.*, 476 F.3d 1359, 1366 (Fed. Cir. 2007) (“An applicant should know information is material when the Examiner repeatedly raises an issue to which the information relates”). He clearly withheld the prior art in order to deceive the Examiner.

E. Dr. Eklund’s Failure to Disclose the Highly Material Prior Art Was Intended to Deceive the Patent Office and Violated His Duty of Candor.

1. Dr. Eklund was aware of his duty to disclose prior art, but failed to disclose any prior art to the Patent Office.

Dr. Eklund understood that he was under a duty to disclose information material to his

¹⁰

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[FF 294-307; DX1005, DX1006] He withheld this prior art from the Patent Office.

[FF 302-306; PX4 at p. 1]

¹¹

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. [DX626; FF 288-293] He did

disclose both the Colak patent and article in a later patent application. [DX192; DX472; FF 291-293]

¹²

REDACTED

. [7:14-24, 43:6-44:16 (9/21/07 Tr.)]

patent application and signed a declaration recognizing this duty. [FF335-338; DX102 at FCS150] Yet, he did not disclose *any* of the twelve prior art references in his possession. [FF339-344] Rather, the Examiner considered only three prior art references during prosecution, namely – U.S. Patent No. 4,626,879 to Colak, U.S. Patent No. 4,628,341 to Thomas and Sze, *Physics of Semiconductor Devices* (1981) – *all cited by the Examiner, not Dr. Eklund or his attorney.* [PX4 at p. 1; FF341; PX8] The sheer volume of material prior art withheld by Dr. Eklund – including twelve highly material references, at least eight of which disclose the claimed extended drain and one, the 1982 Ludikhuize article, disclosing the claimed P-TOP – in itself supports an inference of Dr. Eklund’s deceptive intent. *See Cargill, Inc. v. Canbra Foods Ltd.*, 476 F.3d 1359, 1366 (Fed. Cir. 2007) (intent may be inferred from “repeated” nature of omission).

Other facts support this inference as well. Dr. Eklund was an experienced engineer at the time he prosecuted the ‘075 application – with a Ph.D. in electrical engineering and twelve years of experience in the field. [FF345-348; *see also* FF349-355] He clearly understood the materiality of the prior art he had collected. Not only did he study that art to sort out the most pertinent references,

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[FF80-81; DX627; *see also* FF316-

334] In addition to studying and sharing this art with others, his invention notes clearly show that he used some of this art as he was conceiving and developing the alleged ‘075 invention. Yet he failed to disclose any of this prior art – or indeed, any prior art at all – to the Patent Office. [PX4 at p. 1; FF340] Any attempted explanation for this failure is not credible.

2. Dr. Eklund was motivated to deceive in order to ensure investment in the invention and a \$5 Million price tag for the patent application.

During the prosecution of the ‘075 Patent, Data General spun off Eklund’s projects on high voltage MOS devices as a new independent company – Power Integrations. [FF356-362] Data General and others invested in the company and named Dr. Eklund as a founder, Director and Officer. [FF356-362] In 1988, Power Integrations and its investors requested that Dr.

Eklund clarify the status of the patent application and assess the probability that the patent was going to issue and who owned it. [FF366-370]

REDACTED

[PX50

at KE00012; FF363-374]

REDACTED

[FF373-374; PX50 at KE00012] This half-truth failed to disclose what Dr. Eklund actually knew,

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Based upon the letter, Dr. Eklund transferred the '075 Patent application to Power Integrations in exchange for stock which was ultimately worth approximately \$5 million. [FF375-378] Therefore, Dr. Eklund had a direct financial interest in ensuring the '075 Patent issued, motivating him to deceive the Patent Office.

3. **Dr. Eklund withheld from his attorney those portions of his invention notes that discussed prior art, but provided portions that did not.**

Dr. Eklund's September 1984 notes (PX29) were four pages long. [PX29] The first page discussed the alleged invention but not prior art. [PX29 at p. 1] The second and third pages discussed the Wakaumi and Hower prior art, while the fourth allegedly disclosed another version of the invention. [PX29 at pp. 2-4]

REDACTED

[FF379-380] In other words, Dr. Eklund withheld prior art from his own attorney during prosecution of the '075 Patent. This is significant evidence of Dr. Eklund's intent to deceive. More generally, Dr. Eklund admittedly did not disclose *any* prior art references to the Patent Office :

REDACTED

[FF335-344]

It is settled that an applicant cannot circumvent the patent disclosure system by segregating his own and his patent attorney's knowledge in this way. *Brasseler*, 267 F.3d at 1380.

4. **Dr. Eklund withheld production of his 1984 prior art study until the eve of trial and lied in his deposition about knowledge of the prior art.**

REDACTED

[FF102; *see also* DI 491] \

REDACTED

[FF381-382] This testimony was completely false and is further evidence of deceptive intent.

5. **The “Background” section of the ‘075 Patent conceals critical features of the prior art and thus is further evidence of deception.**

Dr. Eklund cannot rely on the “Background” section in his ‘075 Patent as a good faith disclosure of the prior art where it deliberately fails to mention the existence of either the P-TOP or extended drain feature. The “Background” section of the ‘075 Patent does not disclose the particular structure of any prior art device, publication or patent. [PX4 at 1:15-50] Nor does it even mention the existence or nature of any type of “P-TOP” or “extended drain” or their *structures* that were clearly known to Dr. Eklund. Rather, the cursory “background” section conceals the substance of the prior art structures. It was thus not only useless to the Examiner’s review of Dr. Eklund’s claims regarding the P-TOP and extended drain, but was deceptive.

During prosecution the Examiner repeatedly made it clear he rejected the claims in light of Colak because Dr. Eklund’s claims “do not *structurally* distinguish the claims over Colak.”

[PX8 at PIF00035 (emphasis added); FF208-212] During prosecution, Dr. Eklund overcame these rejections by arguing that “[n]one of the cited references show [the claimed] structure.” [PX8 at PIF00044] At that point, Dr. Eklund was on notice of the need to disclose prior art *structures* in any “Background” of the invention, but did not do so. This is evidence of Dr. Eklund’s intent to deceive. *See Molins Plc v. Textron*, 48 F.3d 1172, 1183-1184 (Fed. Cir. 1995) (“burying” and mischaracterization of prior art in application may evidence intent to deceive).

IV. POWER INTEGRATIONS COMMITTED INEQUITABLE CONDUCT DURING THE PROSECUTION OF THE ‘851 PATENT.

During the prosecution of Power Integrations’ ‘851 Patent, the Examiner initially rejected many of the claims as invalid in light of the admitted prior art shown in Figure 1 of the ‘851 patent itself. [FF435] Power Integrations never disputed that this prior art included “a frequency variation circuit that provides a frequency variation signal” and every other element in the rejected claims. [FF440] Instead, Power Integrations amended the pending claims to add an oscillator element and affirmatively represented that the prior art did not “disclose, teach, or suggest” this single new limitation. [FF441-443]

Power Integrations’ representation was false and deceptive.

REDACTED

[FF446-471] The inventors not only withheld this prior art, they affirmatively misrepresented it in order to deceive the Patent Office into granting Power Integrations overly broad claims. The ‘851 Patent should be held unenforceable due to this inequitable conduct.¹³

A. The Claims Only Issued Because Power Integrations Withheld Prior Art and Misled the Examiner.

Power Integrations’ ‘851 Patent describes a power supply that uses frequency variation to reduce electromagnetic interference (or “EMI”). [FF399-408] This was hardly pioneering

¹³ Claims of the ‘851 Patent also require a “soft start circuit.” As set forth more fully in Section V, Power Integrations also committed inequitable conduct by withholding information about its prior art SMP3, SMP240 and SMP260 devices, all of which include an internal soft start. Fairchild incorporates that section by reference since it provides a separate basis of inequitable conduct with respect to the ‘851 Patent.

technology when Power Integrations filed the application in 1998. Balu Balakrishnan, the lead inventor, admits that the EMI problem was known before the ‘851 Patent and that neither he nor Power Integrations “invented” the idea of power supplies or frequency jitter. [FF409-415]

1. Power Integrations’ inventors withheld prior art.

The inventors of the ‘851 Patent were all Power Integrations engineers and extremely familiar with the state of the art. Indeed, Mr. Balakrishnan testified that it was a “good assumption” that he knew more about power supplies than the Patent Examiner. [FF418] Thus, the inventors understood that the Patent Examiner was particularly dependant upon their disclosure and description of the prior art. [FF416-418]

During the prosecution of the ‘851 Patent, Power Integrations disclosed some of the prior art that its inventors knew of. Power Integrations included a short “Background” section in the ‘851 Patent, which referred to Figure 1. [FF455] While Mr. Balakrishnan concedes that Figure 1 of the ‘851 Patent shows the prior art, Power Integrations did not originally label this as prior art. [FF421-424] The Examiner independently determined that Figure 1 was prior art and required Power Integrations to label it as such. [FF423-426]

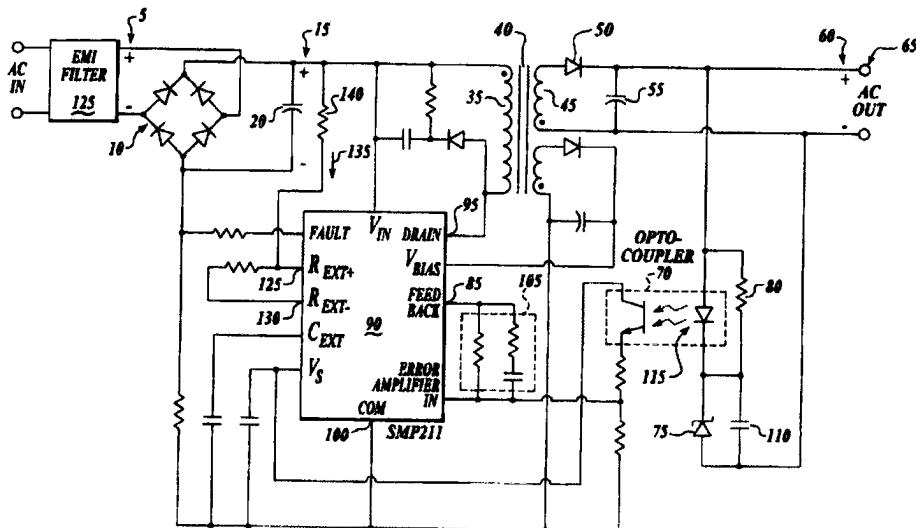


Fig. 1 (prior art)

[FF428] Of critical importance, the Applicants withheld key details of the admitted prior art – including the structure and operation of **switch 90**. While including the label “SMP211” in the

Prior Art Figure, Power Integrations failed to fully explain in the ‘851 Patent or its prosecution history what the “SMP211” was. [FF450] Only during litigation was it revealed that the SMP211 is a prior art Power Integrations device designed by the inventors of the ‘851 Patent.

[FF449-451]

REDACTED

[FF564-571]

REDACTED

[FF572-577] The SMP211 datasheet contained significant detail and 19 pages of circuit diagrams for the SMP211. [DX76] All of this was withheld from the Patent Office.

2. **Power Integrations' claims were rejected because of the admitted prior art in Figure 1.**

Even without any information about the prior art SMP211, the Examiner still rejected some of Power Integrations’ initial claims as anticipated by Prior Art Figure 1. [FF430-435] Specifically, the application for the ‘851 Patent contained two independent claims – claim 1 and claim 29 (which issued as claim 11). [FF430] Claims 1 and 29 were essentially the same. [FF432] Both required identical terminal, switch, and frequency variation elements. *Id.* Claim 1, however, also required an oscillator that generated a maximum duty cycle signal and an oscillation signal. [FF431-433] Claim 29 did not originally require any oscillator.

The Examiner rejected claim 29 because the Prior Art Figure 1 included every element:

Claim Rejections – 35 U.S.C. § 102

5. Claims 29, 35 & 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Applicants’ Prior Art Fig. 1.

Applicants’ Prior Art Fig. 1 shows a first terminal 95, a second terminal Com, a switch/drive circuit 90 and a frequency variation circuit 140 as recited in claim 29.

Further shown is a rectifier 10, a capacitor 15, a first winding 35 and a second winding 45 as recited in claim 35.

Further shown is a feedback terminal (Error Amplifier In) as recited in claim 37.

[FF435 (emphasis added)] At the same time, the Examiner allowed claim 1, explaining that he believed that the prior art did not disclose the required oscillator:

Allowable Subject Matter

8. The prior art of record does not appear to disclose or suggest a PWM switch comprising an oscillator for generating a maximum duty cycle signal and a singnal [sic] with a frequency range dependant on a frequency variation circuit as

recited in claim 1.

[FF437] Since the only difference between claims 1 and 29 is the oscillator element, the

Examiner made clear that this was the only reason any claims were allowed.

Claim 1 – A pulse width modulated switch comprising:	Claim 29 – A regulation circuit comprising:	Examiner's Rejection and Response
a first terminal	a first terminal	“Applicants’ Prior Art Fig. 1 shows a first terminal 95... as recited in claim 29.”
a second terminal	a second terminal	“Applicants’ Prior Art Fig. 1 shows ... a second terminal Com... as recited in claim 29.”
a switch comprising a control input, said switch allowing a signal to be transmitted between said first terminal and said second terminal according to a drive signal provided at said control input;	a switch comprising a control input, said switch allowing a signal to be transmitted between said first terminal and said second terminal according to a drive signal provided at said control input;	“Applicants’ Prior Art Fig. 1 shows... a switch/drive circuit 90... as recited in claim 29.”
a frequency variation circuit that provides a frequency variation signal;	a frequency variation circuit that provides a frequency variation signal;	“Applicants’ Prior Art Fig. 1 shows... a frequency variation circuit 140 as recited in claim 29.”
an oscillator that provides an oscillation signal having a frequency range, said frequency of said oscillation signal varying within said frequency range according to said frequency variation signal, said oscillator providing a maximum duty cycle comprising a first state and a second state; and		“The prior Art of record does not appear to disclose or suggest a PWM switch comprising an oscillator for generating a maximum duty cycle signal and a singnal [sic] with a frequency range dependant on a frequency variation circuit as recited in claim 1.”
a drive circuit that provides said drive signal when said maximum duty cycle signal is in said first state and a magnitude of said oscillation signal is below a variable threshold level.	a drive circuit that provides said drive signal for a maximum time period of a time duration cycle; wherein said time duration of said cycle varies according to said frequency variation signal.	“Applicants’ Prior Art Fig. 1 shows... a switch/drive circuit 90... as recited in claim 29.”

3. **To overcome the Examiner’s rejection, Power Integrations amended claim 29 to copy the oscillator element from claim 1.**

Power Integrations never disputed the Examiner’s rejection that Prior Art Figure 1 contained the frequency variation circuit and every other element of claim 29. [FF436] Instead, Power Integrations embraced the Examiner’s determination that Prior Art Figure 1 lacked an

“oscillator for generating a maximum duty cycle signal,” and amended claim 29 to include the exact same oscillator as in claim 1. [FF439-441] Power Integrations argued that claim 29 should be allowed because of this oscillator element:

35 U.S.C. § 102 Rejections

In the December 13, 1999 Office Action, claims 29, 35 and 37 are rejected under 35 U.S.C. § 102(b) as being anticipated by Applicants’ Prior Art Figure 1.

Claim 29 as presently amended now expressly recites a regulation circuit that includes an oscillator that provides a maximum duty cycle signal and an oscillation signal having a frequency range that is varied according to a frequency variation signal. *The Applicants’ Prior Art Figure 1 fails to disclose, teach or suggest such limitations.* Accordingly, the Applicants respectfully submit that the instant section 102 rejection has been overcome.

[FF442 (emphasis added)] Power Integrations never provided any other reason to overcome the prior art or the Examiner’s rejection. [FF443-444] Accepting Power Integrations’ representation, the Examiner allowed the claims of the ‘851 Patent. [FF445]

Thus, Power Integrations argued that both of two separate “limitations” (deliberately plural in Power Integrations’ response to the Examiner’s rejection) were missing from the prior art. [FF438-442] First, “an oscillator that provides a maximum duty cycle signal.” *Id.* Second, an oscillator that provides “an oscillation signal having a frequency range that is varied according to a frequency variation signal.” *Id.* If either of these affirmative representations is false, Power Integrations committed inequitable conduct. The evidence reveals that both statements are untrue.

B. The Prior Art Withheld From the Examiner Is Highly Material Because it Taught the Oscillator Element Power Integrations Stated Was Missing.

1. **Prior Art Figure 1 includes an oscillator that provides “an oscillation signal having a frequency range that is varied according to a frequency variation signal”.**

In the Background of the ‘851 Patent, the inventors admit that (as used in Prior Art Figure 1) the SMP211 (switch 90) includes an oscillator that generates a saw-toothed oscillation signal, the frequency of which varies according to the jitter current frequency variation signal:

The jitter current 135 is used to vary the frequency of the saw-toothed waveform generated by the oscillator contained in the pulse width modulated switch 90.... Varying the frequency of operation of the pulse width modulated switch by varying the oscillation frequency of the oscillator is referred to as frequency jitter.

REDACTED

[FF457] Thus, the

prior art meets this limitation. [FF449-460]

2.

REDACTED

Thus, the only issue is whether the prior art (including switch 90, the “SMP211”) also discloses an oscillator providing a maximum duty cycle signal. It does. The SMP211 datasheet (which was withheld from the Patent Office) discloses exactly that “the D_{MAX} signal from the oscillator limits the maximum duty cycle by gating the output driver.” FF465. The SMP211 datasheet even includes a figure showing the oscillator providing the maximum duty cycle signal (as well as the oscillation signal “SAW”):

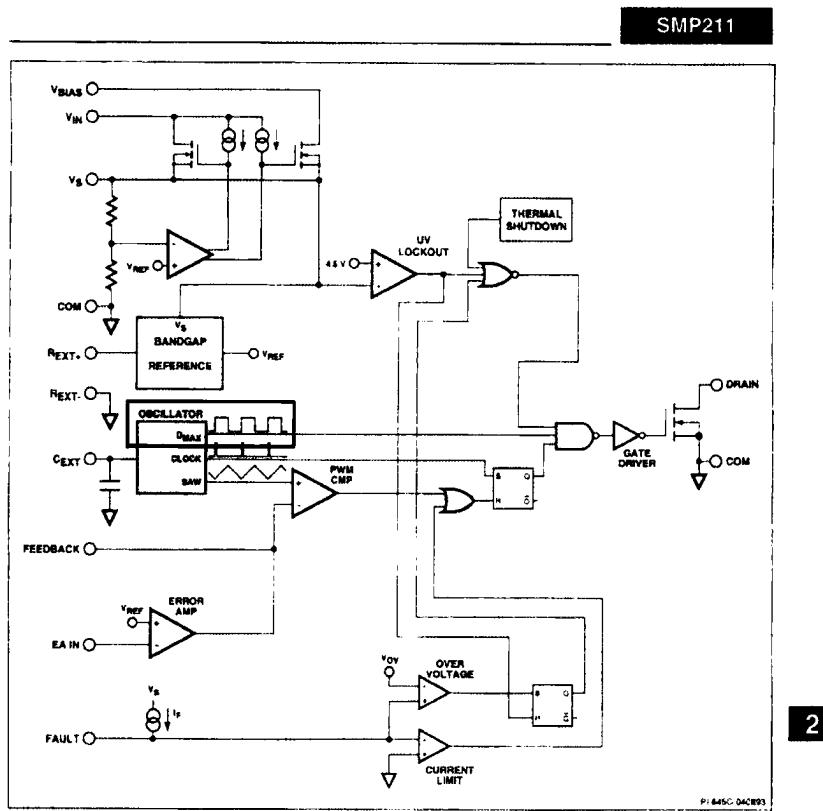


Figure 3. Functional Block Diagram of the SMP211.

¹⁴ During trial, Power Integrations sought to back away from this admission about the prior art. Regardless of their litigation-inspired testimony, the inventors cannot retract this clear admission in the background of the ‘851 Patent. “Admissions in the specification regarding the prior art are binding on the patentee for purposes of a later inquiry into obviousness.” *Pharmastem Therapeutics, Inc. v. Viacell, Inc.*, 491 F.3d 1342, 1362 (Fed. Cir. 2007).

**Figure 3 – Functional Block Diagram from the SMP211 Datasheet
Showing “Oscillator” That Generates Maximum Duty Cycle Signal [FF464]**

REDACTED

[FF461-462]

REDACTED

[FF468-471]

3. The withheld prior art SMP211 was highly material.

Since the prior art SMP211, as used in Prior Art Figure 1, includes the same oscillator element added by Power Integrations to overcome the Examiner’s rejection, it squarely meets the definition of information “material to patentability” set forth in 37 C.F.R. § 1.56. [FF472-492] Specifically, the SMP211 (in combination with Prior Art Figure 1 of the ‘851 Patent) establishes “a *prima facie* case of unpatentability of a claim” since the Examiner explained that the only reason he allowed the claims was because the prior art did not appear to disclose the oscillator shown in the SMP211 datasheet:

“Oscillator” Element	Power Integrations’ Misrepresentations	Prior Art SMP211
an oscillator that provides [i] an oscillation signal having a frequency range, said frequency of said oscillation signal varying within said frequency range according to said frequency variation signal, said oscillator providing [ii] a maximum duty cycle comprising a first state and a second state; and	“Claim 29 as presently amended now expressly recites a regulation circuit that includes an oscillator that provides [iii] a maximum duty cycle signal and [ii] an oscillation signal having a frequency range that is varied according to a frequency variation signal. <i>The Applicants’ Prior Art Figure 1 fails to disclose, teach or suggest such limitations [plural].</i> ” [FF442]	[i] “The jitter current 135 is used to vary the frequency of the saw-toothed waveform generated by the oscillator contained in the pulse width modulated switch 90.... Varying the frequency of operation of the pulse width modulated switch by varying the oscillation frequency of the oscillator is referred to as frequency jitter.” [FF456; FF449-460] [ii] REDACTED

Further, the SMP211 “refutes, or is inconsistent with” Power Integrations’ argument that claim 29 (as amended to include the oscillator) should be allowed because the prior art does not

¹⁵ According to the Federal Rules of Civil Procedure, the fact that the oscillator in the prior art SMP211 provides a maximum duty cycle signal “is conclusively established unless the court on motion permits withdrawal or amendment of the admission.” Fed. R. Civ. P. 36(b).

“disclose, teach, or suggest” such limitations. Such affirmative misrepresentations are even “more likely to be regarded as material” than a simple failure to disclose prior art. *Digital Control*, 437 F.3d at 1318. Only after Power Integrations made this misstatement – and amended its claims to include an oscillator with a maximum duty cycle signal – did the Examiner issue a “Notice of Allowability” for the ‘851 Patent. [FF430-445]

REDACTED

[FF446]

We are now in the unique position of knowing for a fact that the Patent Office considers the SMP211 datasheet material. During the course of this litigation, the Patent Office granted a request to reexamine whether the ‘851 Patent should have issued in light of the SMP211 datasheet, specifically stating that the SMP211 “raises an SNQ [substantial new question]” as to the patentability of claims of the ‘851 Patent. [FF491] At the same time, the Patent Office determined that the SMP211 was not cumulative of the art that was previously considered by the Patent Office during initial examination of the patent:

Such teachings are not cumulative to any written discussion on the record of the teachings of the prior art, were not previously considered nor addressed during a prior examination and the same question of patentability was not the subject of a final holding of invalidity by Federal Courts.

[FF492] This means that the withheld SMP211 datasheet was more material than the limited prior art provided to the Examiner including the Figure 1 prior art drawing.

C. Power Integrations Intentionally Withheld the Prior Art SMP211 and Deliberately Deceived the Examiner.

Since Power Integrations’ misconduct is of the highest materiality – the withheld SMP211 devices and datasheet not only anticipate claims of the ‘851 Patent but directly contradict Power Integrations’ affirmative misrepresentations about the state of the prior art – a correspondingly low level of intent is required. *Baxter Int'l, Inc. v. McGaw, Inc.*, 149 F.3d 1321, 1327 (Fed. Cir. 1998) (“The more material the omission, the less evidence of intent will be required in order to find that inequitable conduct has occurred.”). “Intent need not, and rarely can, be proven by direct evidence. *Merck*, 873 F.2d at 1422. Instead, intent to deceive the Patent

Office is most commonly “inferred from the facts and circumstances surrounding the applicant’s overall conduct.” *Impax*, 468 F.3d at 1375. Here, the Court should infer deceptive intent from the high level of materiality of Power Integrations’ misstatements and the withheld art, and the evidence that Power Integrations knew of that materiality. *Critikon*, 120 F.3d at 1257 (“A patentee facing a high level of materiality and clear proof that it knew or should have known of that materiality, can expect to find it difficult to establish ‘subjective good faith’ sufficient to prevent the drawing of an inference of intent to mislead.”)

1. **Mr. Balakrishnan and other inventors understood their duty to disclose prior art.**

REDACTED

[FF493-520] Indeed, at the time their application for the ‘851 Patent was filed, each of the three applicants signed and acknowledged under penalty of perjury their “duty to disclose information which is material to the patentability of th[e] application in accordance with Title 37, Code of Federal Regulations, § 1.56(a).” [FF494]

Mr. Balakrishnan testified that when he submits a patent application, he reviews the claims and specifically looks at Power Integrations products (such as the SMP211) and other information Power Integrations knows regarding the prior art. [FF525-530] Despite this, in his over 100 issued patents, Mr. Balakrishnan cannot recall ever submitting a Power Integrations product, datasheet or schematic as prior art. [FF542-545] Mr. Balakrishnan continued this pattern of withholding key internal Power Integrations prior art by failing to provide any information about the SMP211 during the prosecution of the ‘851 Patent. [FF472-484]

REDACTED

[FF509-513] ;

REDACTED

[FF525-533] Even after the amendment adding the oscillator element to claim 29 of the ‘851 Patent and the statement that the prior art failed to “disclose, teach, or suggest” such limitations as an oscillator that provided a maximum duty cycle signal, Mr. Balakrishnan and the other

inventors continued to withhold all information about the SMP211.

Mr. Balakrishnan understood that Leif Lund and Alex Djenguerian, his co-inventors, also had a duty to provide prior art. [FF546]

REDACTED

[FF547-548]

2. **Mr. Balakrishnan and other inventors knew of the materiality of the prior art SMP211 during the prosecution of the '851 Patent.**

The Applicants do not deny that they knew of the SMP211 at the time the application to the '851 Patent was filed. [FF549-577] Although they did not provide any detail regarding the device or the SMP211 datasheet, they mentioned the SMP211 by name in Prior Art Figure 1.

[FF428-429]

REDACTED

[FF572-577]

Power Integrations may argue that by including the bare “SMP211” label in Figure 1 of the '851 Patent, they disclosed that device to the Patent Office. This is not true and does not provide a credible explanation for their decision to withhold all further information. Power Integrations withheld the SMP211 datasheets, schematics, and all information about the detailed structure and operation of the device. [FF472-484] There is no evidence that the Examiner saw the SMP211 label, let alone understood that it signified that there was additional Power Integrations prior art that was being withheld.

REDACTED

[FF451]

Had the applicants had a shred of doubt over the materiality of the SMP211, that doubt was dispelled when the Examiner specifically stated the only reason he allowed any of the claims of the '851 Patent was because the prior art submitted by Power Integrations did not disclose an oscillator with a maximum duty cycle signal. [FF435] At that point there could be no possible dispute that the SMP211 – a prior art device that taught a PWM device with an oscillator that generated a maximum duty cycle signal – was material. Rather than disclose this prior art, the

applicants affirmatively misled the Examiner by reaffirming that “Prior Art Figure 1 fails to disclose, teach or suggest such limitations”. [FF442]

3. **Mr. Balakrishnan and other inventors withheld other Power Integrations prior art.**

The SMP211 was not the only Power Integrations prior art that contained an oscillator that generated a saw-toothed oscillation signal and a maximum duty cycle signal. [FF578-620] Power Integrations prior art devices SMP3, SMP240 and SMP260 did, as well. *Id.* These devices were also withheld from the Patent Office during the prosecution of Power Integrations ‘851 Patent. [FF591 and FF620] The fact that Power Integrations withheld not one but multiple prior art references that all show an oscillator with a maximum duty cycle signal shows that Power Integrations intended to deceive the Patent Office.

:

REDACTED

[FF578-584] Thus, even if the applicants mysteriously “forgot” about each specific device, they were still obligated to disclose to the Examiner the undisputed fact that an oscillator that generated a maximum duty cycle signal was well known in the prior art:

Even if Dr. Yamazaki’s testimony that he forgot about the specific passages contained in the ‘423 and the ‘488 applications describing their relevance to TFT’s were plausible, *it is not plausible that he forgot the scientific principle underlying those passages*, i.e., that the importance of reducing impurity levels is germane to both solar cells and TFT’s.

Semiconductor Energy Lab. Co. v. Samsung Elecs. Co., 4 F. Supp. 2d 477, 491 (D. Va. 1998) (emphasis added). The same principle applies here to establish that the inventor’s intent to deceive has been established.

4. **Power Integrations cannot now argue that Prior Art Figure 1 lacked “a frequency variation circuit that provides a frequency variation signal.”**

Despite the fact that the Patent Examiner specifically stated (and Power Integrations never disputed) that Prior Art Figure 1 included “a frequency variation circuit 140 as recited in claim 29”, the Court construed the term “frequency variation signal” to require (in part) an “internal” signal. [FF435-436] Power Integrations now seeks to rely upon this new construction to excuse its failure to disclose the SMP211 to the Examiner during the prosecution of the ‘851 Patent. Far from being a “credible explanation”, this confirms Power Integrations’ misconduct.

Power Integrations cannot rely upon a later, narrow claim construction to withhold prior art from the Examiner. Instead, the applicants swore to provide all references (such as the SMP211) that are material “giving each term in the claim its broadest reasonable construction”:

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

[FF494] Since the Patent Examiner specifically stated that Prior Art Figure 1 included a “a frequency variation circuit 140 as recited in claim 29” (and given that such a frequency variation circuit, by definition, “provides a frequency variation signal”), Power Integrations cannot now rely upon a narrower construction to excuse its failure to provide the SMP211 to the Examiner.¹⁶

Moreover, regardless of the claim construction, Power Integrations committed inequitable conduct by arguing to the Examiner that the claims should be allowed because the prior art did not “disclose, teach, or suggest such limitations” as an oscillator with a maximum duty cycle signal. [FF627-629] This statement, made for the purpose of securing the allowance of the ‘851 Patent, is objectively false and constitutes fraud on the Patent Office.

Power Integrations’ decision to intentionally withhold material prior art and mislead the

¹⁶ As the Federal Circuit has noted, district courts do not interpret claims as the Patent Office would. *In re Trans Tex. Holdings Corp.*, 498 F.3d 1290, 1296, 1301 (Fed. Cir. 2007); MPEP, § 2111. In a district court, “claims should be construed, if possible, to sustain their validity.” *ACS Hosp. Systems, Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577 (Fed.Cir.1984); *Carman Indus., Inc. v. Wahl*, 724 F.2d 932, 937 n. 5 (Fed.Cir.1983). By contrast, in the PTO context, claims are to be given their broadest possible construction. MPEP, § 2111. Accordingly, the Federal Circuit has held that the Patent Office is not bound by any prior district court claim construction. *In re Trans Tex. Holdings*, 498 F.3d at 1296, 1301.

Examiner constitutes inequitable conduct and renders the ‘851 Patent unenforceable.

V. POWER INTEGRATIONS COMMITTED INEQUITABLE CONDUCT DURING THE PROSECUTION OF THE ‘366 PATENT.

Power Integrations’ ‘366 Patent is related to the ‘851 Patent, has the same figures, and an essentially identical specification. [FF638-646] Thus, Power Integrations’ inequitable conduct during the prosecution of the ‘851 Patent also renders the ‘366 Patent unenforceable. [FF647] Moreover, Power Integrations committed additional inequitable conduct by withholding all information about its prior art SMP3, SMP240 and SMP260 devices and datasheets, while burying the Examiner in 75 references that Power Integrations knew were irrelevant, with the intent to deceive the Examiner regarding highly material prior art internal soft start circuits.

A. The ‘366 Patent Is Unenforceable Due to Power Integrations’ Inequitable Conduct During the Prosecution of the Related ‘851 Patent.

Both the ‘851 and ‘366 Patents relate to pulse width modulated (“PWM”) switches manufactured by Power Integrations and used in electronic power supplies. The ‘366 Patent is a “divisional” of the ‘851 Patent and, thus, the patents share the same inventors, figures and specifications.¹⁷ [FF630-632]

The prior art withheld during prosecution of the ‘851 Patent is related to many of the issued claims of the ‘366 Patent. For example, claims 1-8 and 10-11 each require “an oscillator that provides a maximum duty cycle signal,” the very element Power Integrations falsely stated was missing from the prior art during prosecution of the ‘851 Patent, and that was present in the withheld prior art. [DX103] Because there is thus an “immediate and necessary” relationship between the claims of the ‘366 patent and Power Integrations’ inequitable conduct, that conduct infects the ‘366 patent, rendering it unenforceable as well. *Consolidated Aluminum Corp. v. Foseco Int'l Ltd.*, 910 F.2d 804 (Fed. Cir. 1990) (conduct in the prosecution of one patent permeated the prosecution of other continuation patents rendering them unenforceable as well under the doctrine of infectious unenforceability), citing *Keystone Driller Co. v. General*

¹⁷ The only difference between the two specifications is that the ‘366 Patent includes a “cross-reference” referring to the earlier ‘851 Patent. [FF639]

Excavator Co., 290 U.S. 240 (1933); *Fox Indus., Inc. v. Structural Pres. Sys., Inc.*, 922 F.2d 801, 803-04 (Fed. Cir. 1990) (same); compare *Baxter v. McGaw*, 149 F.3d 1321, 1332 (Fed. Cir. 1998) (infectious unenforceability did not apply where there was no relation between the issued claims and the prior art omitted from prosecution of a divisional application).

B. **Power Integrations Withheld All “Soft Start” Information About Its Highly Material SMP240, SMP260 and SMP3 Prior Art.**

Power Integrations’ ‘366 Patent describes a power supply that incorporates a “soft start circuit.”

REDACTED

[FF633-635 and FF684-686]

Indeed, those inventors had designed prior art soft start devices that were sold by Power Integrations prior to the alleged “invention” of the ‘366 Patent. Despite the fact that Mr. Balakrishnan testified that he would always search through Power Integrations devices for potential prior art to submit to the Patent Office [FF527], Power Integrations withheld all evidence of its prior art internal soft start devices.

1. **Power Integrations’ SMP240 and SMP260 Devices are highly material.**

The SMP240 and SMP260 devices are prior art. [FF659-665]]

REDACTED

[FF664-670] Mr. Balakrishnan supervised this project. [FF662] Power Integrations published datasheets describing these devices, offered them for sale, and sold them all more than year before the application leading to the ‘366 Patent was filed. [FF659-670]

The evidence demonstrates the materiality of the SMP240 and SMP260 devices. [FF671-697] In deposition, Mr. Lund confessed his belief that the prior art SMP240 and SMP260 devices contained every element of claim 1 of the ‘366 Patent:

REDACTED

REDACTED

Power Integrations may argue that the SMP240 and SMP260 are not material because applying the Court's means-plus-function claim construction the jury found that they did not invalidate a different claim of the '366 Patent. As an initial matter, the SMP240 and SMP260 can be and are material *even if they do not invalidate a claim.* What matters is that a reasonable Examiner would have considered them important to the patentability of the claims. The

evidence shows that the SMP240 and SMP260 meet this standard. [FF683-698 and 722-733]

Moreover, it is legally incorrect for Power Integrations to rely upon the Court's 2006 claim construction to excuse their decision to withhold the SMP240 and SMP260 in 1998. The Patent Rules required the Applicants to give the soft start circuit element "its broadest reasonable construction" when considering what prior art to disclose. 37 CFR 1.56. The claims of the '366 Patent are not written in means-plus-function form and there is no indication in either the patent or the prosecution history that either the Examiner or the Applicants considered the "soft start circuit" element to be in means-plus-function form during prosecution. [FF713-721] It thus would have been wrong for Power Integrations to have assumed that the element would be narrowly construed and limited to the specific structure disclosed in the specification.

2. Power Integrations SMP3 is highly material prior art.

Even earlier than the SMP240 and SMP260, Power Integrations was advertising and selling another PWM power supply incorporating an internal soft start circuit – the SMP3.

[FF733-744]

REDACTED

[FF586-588 and 734]

The SMP3 includes the first and second terminals, switch, oscillator, and drive circuit claimed in the '366 Patent. [FF736-744] As described in a published article, the SMP3 also incorporates an internal soft start circuit. [FF739-743] "The soft-start circuit [of the SMP3] consists of a current source and an internal capacitor connected to an intermediate stage of the error amplifier."¹⁸ [FF740; DX17]

3. The SMP3, SMP240, and SMP260 are not cumulative of prior art before the Examiner during the prosecution of the '366 Patent.

The SMP3, SMP240, and SMP260 all have internal soft start circuits. [FF683-698 and 737-743] This is different than the *external* soft start circuits described in the prior art submitted

¹⁸ While for purposes of the litigation Power Integrations now claims that its prior art SMP3 did not have an internal soft start,

REDACTED

by Power Integrations. [FF701-722] Throughout this litigation Power Integrations has argued that the allegedly inventive element of the ‘366 Patent was that the soft start was “internal” or “integrated” – *just like in the prior art SMP3, SMP240, and SMP260 devices.*

REDACTED

[FF699] When recently presented with this prior art, the Patent Office determined that it presented a substantial new question of patentability and was not cumulative, and accordingly instituted a reexamination of Power Integrations’ ‘366 Patent. [FF699-700] The Patent Office’s determination that this art raises a “substantial new question” establishes that it was more pertinent than the art previously before the Examiner; none of which art was considered significant enough to merit discussion. [*See also* FF763-770]

C. Power Integrations Withheld All Information About Its SMP240, SMP260, and SMP3 Devices with the Intent to Deceive the Patent Office.

- a. Power Integrations’ inventors knew the materiality of the withheld SMP3, SMP240, and SMP260 prior art.

[FF611 and 632]

REDACTED

[FF674-680, 687; *see also* FF783-786] Yet, despite his obligation to provide the Patent Office with prior art, Mr. Lund failed to produce any information concerning the SMP240 or SMP260 devices during the prosecution of the ‘851 and ‘366 Patents. [FF649-659]

REDACTED

[FF552-555] At this time, Power Integrations was a small company – Mr. Balakrishnan only oversaw five to ten engineers and Power Integrations had less than 10 commercial devices – and Mr. Balakrishnan was familiar with Power Integrations’ offerings. [FF554 and 559-563] It defies belief that Mr. Balakrishnan would not have known of the SMP240 and SMP260 devices. Moreover, he certainly knew, or should have known, that the internal soft start circuits were material to the key inventive aspect of the ‘366 invention.

Finally, the SMP3, SMP240, and SMP260 were all described in published articles (which articles were also withheld from the Patent Office). [FF415, FF692-694, and FF739-744] Given the size of the company and their involvement with the products, the inventors of the ‘366 Patent would have read these articles.

Despite this, Power Integrations failed to provide any information about the internal soft start circuits of its SMP3, SMP240 and SMP260 devices to the Patent Office, but rather only provided information about *external* soft start circuits. [FF649-659] Power Integrations and its inventors withheld the datasheets, schematics, and articles describing these devices so that they could broadly claim internal soft start circuits in their ‘366 and ‘851 Patents.¹⁹

b. **Power Integrations sought to “bury” the Examiner with irrelevant prior art.**

Rather than provide the Patent Office with information about Power Integrations’ SMP240, SMP260 and SMP3 internal soft start circuits, Power Integrations dumped over 75 less pertinent references (for external soft start circuits) on the Examiner. [FF791-801]

REDACTED

1

[FF792]

Critically, none of the over 75 references submitted by Power Integrations was considered significant enough by the Examiner to warrant any discussion in the prosecution history.

[FF793] Furthermore, the Patent Office has found in the recent grant of re-examination that the SMP260 was “not cumulative” of prior art previously cited. [FF700] Thus, it is this “dump” of 75 prior art references that the Patent Office has now determined to be less pertinent than the

¹⁹ During trial Power Integrations suggested for the first time that the Patent Office had information about the SMP240 and SMP260 because a patent describing an aspect of those devices was listed as a cited reference. Instead of excusing Power Integrations’ misconduct, this merely highlights its fraud. First, the patent never refers to either prior art device and, so, could not have alerted the Examiner to the existence of these products. [DX1000] Second, that patent does not show or describe the soft start portion of the device relevant to the claims of the ‘366 Patent. [FF709-710] Finally, the patent was identified by the Examiner and not provided by the Applicants. [FF711] Thus, while it does not disclose the pertinent details of the SMP240 and SMP260 devices, it would surely alert the Applicants to the fact that such information was viewed as material by the Examiner. [FF712]

SMP datasheets.

VI. POWER INTEGRATIONS COMMITTED INEQUITABLE CONDUCT DURING THE PROSECUTION OF THE '876 PATENT.

During prosecution of the '876 Patent, Power Integrations intentionally deceived the Patent Office regarding the prior art so that it would issue a very broad claim for a method of varying the switching frequency of a power supply. Specifically, Power Integrations deliberately withheld material prior art (including the publicly disclosed invention of its own earlier '851 Patent) that anticipates at least claim 11 of the '876 Patent. The Court should hold that this inequitable conduct by Power Integrations renders the entire '876 Patent unenforceable.

Like the '851 Patent discussed above, Power Integrations' '876 Patent is directed towards varying the frequency of a power supply in order to reduce EMI. [FF803-810] As discussed in more detail below, the invention of the '851 Patent is prior art to the '876 Patent under 35 U.S.C. § 102(a) because Power Integrations publicly disclosed that invention two months before it allegedly invented the circuits and methods claimed in the '876 Patent.

REDACTED

Yet, when it filed the application that led to the '876 Patent, Power Integrations failed to inform the Patent Office that the invention of the '851 Patent was publicly disclosed prior art. Power Integrations also deliberately withheld the description of that prior art, which had been included in the '876 Invention Disclosure, to deceive the Patent Office into allowing an overly broad, invalid claim.

A. The '851 Patent is Prior Art to the '876 Patent.

According to the Invention Disclosure that led to the '851 Patent (the “'851 Invention Disclosure”), Power Integrations publicly disclosed the '851 invention in March of 1998.

[FF823]

REDACTED

[FF827]. The invention disclosed in the '851 Patent is thus prior art to the '876 Patent. 35 U.S.C. § 102(a).

Although the pre-printed '851 Invention Disclosure refers to March 1998 as the

“expected” date of first public disclosure, the evidence supports but one conclusion: that the ‘851 invention was in fact publicly disclosed in March 1998.

REDACTED

[FF834]

REDACTED

[FF832-833] In light of such

contemporaneous signatures, any later, litigation-inspired claim that such public disclosure did not occur is not credible.

Further, several months after signing the ‘851 Invention Disclosure, these very same inventors expressly admitted that the ‘851 invention was prior art to the ‘876 Patent.

REDACTED

[FF837] Of course, the ‘851 Patent had not yet issued, and thus they could not refer to the invention by patent number.

REDACTED

[FF836] This is the same two-oscillator approach to modulating frequency (using a main oscillator, described as the PWM oscillator, and a low frequency oscillator) described in the ‘851 Invention Disclosure:

The low frequency oscillator’s sawtooth output is also used to generate a current source proportional to its output voltage. This current source is added to the main current source of the PWM oscillator to modulate its frequency.

[FF824] The inventors also included a circuit diagram of the ‘851 invention as Figure 1 of the ‘876 Invention Disclosure, which the inventors labeled “Frequency Jittering Prior Art.” [FF825-826]

REDACTED

REDACTED

The inventors thus admitted *at the time they signed* their '876 Invention Disclosure that the circuit they depicted and described was prior art to the '876 Patent. Any attempt by Power Integrations to claim that such circuits are *not* prior art should be viewed at best with skepticism. [See FF816-844]

B. **The '851 Prior Art Invention Anticipated Claim 11 Of The '876 Patent and is Thus Highly Material Prior Art.**

The '851 prior art invention withheld by Power Integrations invalidates at least claim 11 of the '876 Patent and, thus, is of the highest degree of materiality. [FF845-858] This prior art was described by Power Integrations in the '876 Invention Disclosure, as well as in the '851 Invention Disclosure (which invention was publicly disclosed as described above). As shown below, this prior art included each element of claim 11:

'876 Patent, Claim 11 –
*A method for generating
a switching frequency in
a power conversion
system, comprising:*

generating a primary current;

REDACTED

cycling one or more secondary current sources to generate a secondary current which varies over time; and

REDACTED

'876 Patent, Claim 11 – <i>A method for generating a switching frequency in a power conversion system, comprising:</i>	Power Integrations' Description of the Withheld Prior Art	'851 Invention Disclosure
combining the secondary current with the primary current to be received at a control input of an oscillator for generating a switching frequency which is varied over time.	REDACTED	REDACTED

REDACTED

C. **Power Integrations Intended to Deceive the Patent Office Regarding the Prior Art So That It Would Issue a Very Broad Claim.**

As demonstrated above, the admitted ‘851 prior art invention is of the highest level of materiality because it anticipates a claim of the issued ‘876 Patent. This strong showing of materiality allows a lesser showing of intent. *Novo Nordisk Pharm., Inc., v. Bio-Technology Gen. Corp.*, 424 F.3d 1347, 1359 (Fed. Cir. 2005) (where there has been a showing of high materiality, “the showing of intent can be proportionally less.”) Indeed, under these circumstances, intent can be inferred from the fact that Power Integrations surely knew, or should have known, that the withheld ‘851 prior art invention would have been material to the Patent Office’s consideration of the ‘876 Patent. *Critikon v. Becton Dickinson Vascular Access, Inc.*, 120 F.3d 1253, 1256 (Fed. Cir. 1997) (For inequitable conduct “intent may be inferred where a patent applicant knew, or should have known, that withheld information would be material to the PTO’s consideration of the patent.”)

To begin, it is undisputable that the inventors knew about the omitted prior art and its materiality to the ‘876 invention. In fact, those very same inventors invented the ‘851 prior art invention, and signed the ‘851 Invention Disclosure, which clearly indicated that the ‘851 invention was publicly disclosed in March 1998. [FF859-862]

REDACTED

The evidence further shows that Power Integrations intentionally withheld this admitted prior art from the Patent Office so that it could deceive the Patent Office into issuing claims that covered this prior art.

REDACTED

[FF866] The description of the admitted prior art included in the ‘876 Invention Disclosure was conspicuously missing from this application. [FF867]

REDACTED

REDACTED

[FF872] Power Integrations also went so far as to “incorporate by reference” the entire ‘851 Patent into the ‘876 Patent. [FF874] Power Integrations did so without informing the Patent Office that it had publicly disclosed the ‘851 invention at least two months before allegedly inventing the methods and circuits claimed in the ‘876 Patent. [FF875-876]

Rather than admit the state of the prior art as it had done in its ‘876 Invention Disclosure just two months earlier, Power Integrations intentionally deceived the Patent Office so that it could claim the prior art as part of the ‘876 invention. [FF877]

REDACTED

[FF878-881]

REDACTED

[FF881-882] This intentional withholding of prior art in order to obtain an invalid claim constitutes inequitable conduct that renders the entire ‘876 Patent unenforceable. [FF884]

VII. **CONCLUSION.**

For the foregoing reasons, Fairchild respectfully requests that the Court hold the ‘075, ‘851, ‘366 and ‘876 Patents unenforceable.

ASHBY & GEDDES

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